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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/091,059	03/05/2002	Chul-Jin Kim	8836-149 (B10123-US)	6714
22150	7590	06/10/2005	EXAMINER	
F. CHAU & ASSOCIATES, LLC			WANG, TED M	
130 WOODBURY ROAD			ART UNIT	PAPER NUMBER
WOODBURY, NY 11797			2634	

DATE MAILED: 06/10/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/091,059

Applicant(s)

KIM, CHUL-JIN

Examiner

Ted M. Wang

Art Unit

2634

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 05 March 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 March 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Claim Objections***

1. Claims 5 and 13 are objected to because of the following informalities:
  - Regarding claim 5, the phrase "about 40 KHz" renders the claim indefinite because it is unclear how many KHz (30 KHz, or 35 KHz, or 45 KHz ...) is "about" 40 KHz. In addition, the specification only teaches the predetermined sampling frequency for example, 40 KHz, but not "about" 40 KHz.
  - Regarding claim 13, line 1, change "10" to --- 11 ---.

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.
3. Claims 1-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over the admitted prior art of the instant application in view of McConnell (US 5,204,879).
  - With regard claim 1, the admitted prior art of the instant application teaches a data recovery device, comprising:

a demodulator for demodulating a transmission signal (page 2, lines 11-21); and

a data or symbol recovery using the synchronous signal (page 2, line 22 – page 3, line 2)

a data decision unit for performing a data recovery operation using the selected synchronous signal to recover original data of the transmission signal (Fig.3B and Fig.3D, and page 2, line 22 – page 3, line 8).

The admitted prior art of the instant application teaches all of the subject matter as described in the above paragraph except for specifically teaching a plurality of symbol recovery units, each generating a corresponding synchronous signal and a lock signal, wherein the lock signals are selectively enabled to select one of the synchronous signals, based on pattern variations of the transmission signal detected by the symbol recovery units.

However, McConnell teaches a plurality of symbol recovery units (Fig.6 elements 42 and 44 and column 4 lines 43-55), each generating a corresponding synchronous signal (Fig.6 elements 42 and 44 outputs – FAST SYMBOL CLOCK and SLOW SYMBOL CLOCK) and a lock signal (Fig.6 DELAYED DATA DETECT), wherein the lock signals are selectively enabled to select one of the synchronous signals (Fig.6 elements 51-54 and column 5 lines 1-24), based on pattern variations of the transmission signal detected by the symbol recovery units (column 4 line 57 – column 5 line 24).

It is desirable to a plurality of symbol recovery units, each generating a corresponding synchronous signal and a lock signal, wherein the lock signals are selectively enabled to select one of the synchronous signals, based on pattern

variations of the transmission signal detected by the symbol recovery units in order to improve the performance that is ten times faster than that of known conventional means (column 5 lines 44-60). Therefore, It would have been obvious to one of ordinary skill in the art at the time of the invention was made to include the data recovery device as taught by McConnell in which, having a plurality symbol recovery units as described in the above paragraph, and substituting into the admitted prior art of the instant application's single symbol recovery unit as to improve the performance that is ten times faster than that of known conventional means.

- With regard claim 2, the admitted prior art of the instant application further teaches a level controller for limiting a voltage range of the demodulated signal to a predetermined voltage range (page 2 lines 19-21).
- With regard claim 3, the admitted prior art of the instant application teaches all of the subject matter as described in the above paragraph except for specifically teaching that the level controller excludes voltages levels outside a voltage range that includes sampling points of the synchronous signals, the sampling points being used in recovering the original data.

However, McConnell teaches that the level controller excludes voltages levels outside a voltage range that includes sampling points of the synchronous signals, the sampling points being used in recovering the original data (Fig.1 and Fig.2 and column 2 line 47 - column 3 lines 63).

It is desirable that the level controller excludes voltages levels outside a voltage range that includes sampling points of the synchronous signals, the sampling points being used in recovering the original data in order to reduce the data detect time factor (column 3 lines 54-63). Therefore, It would have been obvious to one of ordinary skill in the art at the time of the invention was made to include the data recovery device as taught by McConnell in which, the level controller excludes voltages levels outside a voltage range that includes sampling points of the synchronous signals, the sampling points being used in recovering the original data, into the admitted prior art of the instant application's data recovery device so as to reduce the data detect time factor.

- With regard claim 4, the admitted prior art of the instant application further teaches that the data decision unit performs a data recovery operation by sampling the demodulated signal using a predetermined sampling frequency within each cycle of a selected one of the synchronous signals (page 2 line 16 – page 3 line 8).
- With regard claim 5, the admitted prior art of the instant application further teaches that the predetermined sampling frequency is about 40 KHz (page 2 line 16 – page 3 line 8).
- With regard claim 6, the admitted prior art of the instant application further teaches that the transmission signal is generated by encoding the original data in Manchester format (page 2 lines 1-18).

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- With regard claim 7, the admitted prior art of the instant application further teaches that the original data comprises an NRZ (Non-Return-to-Zero) data stream (page 2 lines 1-18).
- With regard claim 8, which is a device claim related to claim 2, all limitation is contained in claim 2. The explanation of all the limitation is already addressed in the above paragraph.
- With regard claim 9, which is a device claim related to claim 4, all limitation is contained in claim 4. The explanation of all the limitation is already addressed in the above paragraph.
- With regard claim 10, which is a device claim related to claim 2, all limitation is contained in claim 2. The explanation of all the limitation is already addressed in the above paragraph.
- With regard claim 11, which is a method claim related to claim 1, all limitation is contained in claim 1. The explanation of all the limitation is already addressed in the above paragraph.
- With regard claim 12, which is a device claim related to claim 2, all limitation is contained in claim 2. The explanation of all the limitation is already addressed in the above paragraph.
- With regard claim 13, which is a device claim related to claim 1, all limitation is contained in claim 1. The explanation of all the limitation is already addressed in the above paragraph.

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4. Claims 14-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over “the admitted prior art of the instant application and McConnell (US 5,204,879)” as applied to claims 2 and 4 above, and further in view of Langberg et al. (US 5,852,630).

- With regard claim 14, the admitted prior art of the instant application and McConnell discloses all of the subject matter as described above except for the method written by a software program embodied in a computer-readable medium.

However, Langberg et al. teaches that the method and apparatus for a transceiver warm start activation procedure with precoding can be implemented in software stored in a computer-readable medium. The computer-readable medium is an electronic, magnetic, optical, or other physical device or means that can be contain or store a computer program for use by or in connection with a computer-related system or method (column 3, lines 51-65). One skilled in the art would have clearly recognized that the method of “the admitted prior art of the instant application and McConnell” would have been implemented in a software. The implemented software would perform same function of the hardware for less expense, adaptability, and flexibility. Therefore, it would have been obvious to use the software in “the admitted prior art of the instant application and McConnell” as taught by Langberg et al. in order to reduce cost and improve the adaptability and flexibility of the communication system.



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- With regard claim 15, which is a program storage device claim related to claim 2, all limitation is contained in claim 2. The explanation of all the limitation is already addressed in the above paragraph.
- With regard claim 16, which is a program storage device claim related to claim 1, all limitation is contained in claim 1. The explanation of all the limitation is already addressed in the above paragraph.
- With regard claim 17, which is a program storage device claim related to claim 4, all limitation is contained in claim 4. The explanation of all the limitation is already addressed in the above paragraph.

### ***Conclusion***

5. Reference(s) US 5,521,941, US 5,859,671, and US 6,134,276 are cited because they are put pertinent to the data symbol recovery circuit. However, none of references teach detailed connection as recited in claim.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ted M. Wang whose telephone number is 571-272-3053. The examiner can normally be reached on M-F, 7:30 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Chin can be reached on 571-272-3056. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Ted M Wang  
Examiner  
Art Unit 2634

Ted M. Wang

A handwritten signature in black ink, appearing to read "Shuwang Liu".

**SHUWANG LIU**  
**PRIMARY EXAMINER**